

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB2004/051351

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01L23/552 H01L23/367

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 977 626 A (LEE RONG-SHEN ET AL) 2 November 1999 (1999-11-02) column 1, lines 10-35 column 2, lines 10-46 column 2, line 65 - column 4, line 30; figures 2-6	1-3, 5-10, 12-16
Y	column 5, lines 4-15	4,11
Y	US 6 229 702 B1 (CHAO SHIN-HUA ET AL) 8 May 2001 (2001-05-08)	4,11
X	column 2, line 65 - column 3, line 62; figures 1-3	1,3-5,8, 10,11
	----- -/-	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- * & * document member of the same patent family

Date of the actual completion of the international search

17 December 2004

Date of mailing of the international search report

28/12/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Corchia, A

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB2004/051351

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/089983 A1 (KO ERIC ET AL) 15 May 2003 (2003-05-15) paragraphs '0003!, '0004!, '0009!, '0011! - '0013! paragraphs '0023! - '0027!; figure 1 paragraph '0030!; figure 3C	1-3, 5-10, 12-16
Y	paragraphs '0033! - '0035!; figures 3E, 3F paragraphs '0037!, '0038!; figure 4	4, 11
X	US 5 166 772 A (SOLDNER KEITH D ET AL) 24 November 1992 (1992-11-24) column 1, line 34 - column 2, line 11 column 2, line 60 - column 4, line 33; figures 1-3	1-3, 5, 8-10, 12
X	EP 0 435 530 A (GEN ELECTRIC) 3 July 1991 (1991-07-03) page 5, lines 6-41 column 2, line 60 - column 4, line 33; figures 1, 2 page 6, line 20 - page 7, line 21; figure 2a page 8, line 9 - page 9, line 26; figures 6, 7	1-5, 8-11
P, X	EP 1 347 513 A (BROADCOM CORP) 24 September 2003 (2003-09-24) paragraphs '0003! - '0025! paragraphs '0117! - '0126!, '0135! - '0143! paragraphs '0144! - '0165!; figures 7A-7F paragraphs '0166! - '0171!; figures 8A-8D paragraphs '0172! - '0175!; figure 9A paragraphs '0180! - '0185!; figures 11A-11C paragraphs '0189! - '0193!; figure 13E paragraphs '0195! - '0198!; figure 15A paragraphs '0205! - '0220!	1-16
A	US 5 309 321 A (OLLA MICHAEL A ET AL) 3 May 1994 (1994-05-03)	1-16
A	column 2, line 26 - column 3, line 48; figures 1, 2, 4	9
A	US 4 814 943 A (OKUAKI HIROSHI) 21 March 1989 (1989-03-21) column 4, lines 10-33; figures 6, 7	4, 9, 11

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB2004/051351

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5977626	A	02-11-1999	NONE	
US 6229702	B1	08-05-2001	NONE	
US 2003089983	A1	15-05-2003	TW 510034 B	11-11-2002
US 5166772	A	24-11-1992	NONE	
EP 0435530	A	03-07-1991	EP 0435530 A2 JP 3211757 A US 5359496 A	03-07-1991 17-09-1991 25-10-1994
EP 1347513	A	24-09-2003	US 2003179549 A1 EP 1347513 A2	25-09-2003 24-09-2003
US 5309321	A	03-05-1994	NONE	
US 4814943	A	21-03-1989	JP 62286259 A JP 63013351 A KR 9513744 B1	12-12-1987 20-01-1988 15-11-1995